

CLAIMS

1. A substrate material for an HDD suspension, obtained by shaping a stainless steel foil, wherein, on the surface of said stainless steel foil and on at least one side thereof, there are laminated, at least, a covering layer made chiefly of either one or both of a metal oxide and a metal hydroxide with chromium excluded as the metal species, and an insulating resin layer.

2. A substrate material for an HDD suspension according to claim 1, wherein said covering layer has an average thickness of not larger than 5 μm .

3. A substrate material for an HDD suspension according to claim 1 or 2, wherein said covering layer covers the stainless steel foil at a covering ratio of not smaller than 10%.

4. A substrate material for an HDD suspension according to any one of claims 1 to 3, wherein said covering layer is distributed like islands on the stainless steel foil.

5. A substrate material for an HDD suspension according to any one of claims 1 to 4, wherein cracks are present in said covering layer.

6. A substrate material for an HDD suspension according to claim 1, wherein said metal species is one or more selected from zirconium, titanium and silicon.

7. A substrate material for an HDD suspension according to claim 1, wherein said metal species is titanium.

8. A substrate material for an HDD suspension according to claim 1, wherein the adhering force between the stainless steel foil having said covering layer and the insulating resin layer is not smaller than 0.54 kN/m.

9. A substrate material for an HDD suspension according to claim 1, wherein said stainless steel foil has a thickness of 10 to 100 μm .

10. A substrate material for an HDD suspension according to claim 1, wherein said insulating resin layer

has a thickness of 1 to 150 μm .

11. A substrate material for an HDD suspension according to claim 1, wherein said insulating resin layer is a heat-resistant polyimide resin.

5 12. A substrate material for an HDD suspension according to claim 11, wherein said heat-resistant polyimide resin layer has a three-ply structure of a high thermal expansion polyimide/a low thermal expansion polyimide/a high thermal expansion polyimide.

10 13. A substrate material for an HDD suspension according to claim 12, wherein said heat-resistant polyimide resin layer has a coefficient of linear expansion in a range of 1×10^{-5} to $3 \times 10^{-5}/^{\circ}\text{C}$.

15 14. A substrate material for an HDD suspension according to claim 1, wherein a metal layer is further laminated on said insulating resin layer.

15 15. A substrate material for an HDD suspension according to claim 14, wherein said metal layer is a metal foil.

20 16. A substrate material for an HDD suspension according to claim 15, wherein said metal foil is a surface-treated metal foil.

25 17. A substrate material for an HDD suspension according to claim 15 or 16, wherein said metal foil is a stainless steel foil or a copper foil.

25 18. A substrate material for an HDD suspension according to claim 14, wherein the adhering force between said metal layer and the insulating resin layer is not smaller than 0.54 kN/m.

30 19. A substrate material for an HDD suspension according to any one of claims 1 to 18, which is a substrate material for a load beam that constitutes the HDD suspension.

35 20. A substrate material for an HDD suspension according to any one of claims 1 to 18, which is a substrate material for a flexure blank that constitutes the HDD suspension.